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DIAGNOSIS CANCER OF THE TONGUE AND FLOOR OF THE MOUTH BY ULTRASOUND

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ABSTRACT

Ultrasound in the diagnosis of metastatic lymphatic lesion nodes, an indicator of accuracy put about 90% [8]. Also high detection efficiency affected lymphatic nodes when using additional polarography [9]. However, apart from the positive known possibilities of ultrasound but also about the shortcomings. In some cases there are difficulties in determining the border of the tumor against the background of inflammation, infiltrations. It is not always possible to evaluate involvement in the process of master r vessels, salivary climbed, bone structures, distribution wounds on the pharynx and near- pharyngeal space.

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INTRODUCTION

Ultrasound in the diagnosis of metastatic lymphatic lesion nodes, an indicator of accuracy put about 90% [8]. Also high detection efficiency affected lymphatic nodes when using additional polarography [9]. However, apart from the positive known possibilities of ultrasound but also about the shortcomings. In some cases there are difficulties in determining the border of the tumor against the background of inflammation, infiltrations. It is not always possible to evaluate involvement in the process of master r vessels, salivary climbed, bone structures, distribution wounds on the pharynx and near- pharyngeal space. Also there are difficulties in asses recurrence of the disease against the background postoperative, post radiation changes. It is necessary to mark t and professional development, subjectivity of the given method, since the results of the study research is directly dependent on doctor's skills in ultrasonic diagnostics Gnostics. Method specifics and display capabilities irradiated during the study images are quite complex for analysis by doctors of other pro- loin. It is also important to note from absence to date descriptions of a unified methodology for ultra- sound diagnostics of pathological sing logical changes in language and bottom oral cavity [10–12]. The well-known possibilities ty magnetic resonance imaging (MRI) for diagnosis cancer of the tongue and floor of the mouth. MRI with intravenous contrast enhancement of pos- allows to estimate the prevalence ness of the process, the ratio of the omitted

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holi and adjacent structures, identify met astatically altered lymph nodes [13]. Radio sensitivity assessment with a change in the level of microcirculation collation of the tumor during and a MRI fter radiation therapy before with intravenous contrastrapia can also use- when evaluating effectiveness combined and complex reatment to identify disease recurrence. In a number cases swollen, even with intravenous contrasting, difficulty but due to the presence of tissue edema or pseudo-volumetric effect [14]. Accumulation of contrast substances of unchanged mucus that shell prevents even who determines the boundaries fights. Sensitivity and specificity of MRI in assessing astatically altered lymph tic nodes of the neck fluctuate within 64–92% and 40–81% responsible depending on research [15].

Positron emission tomography (PET) using 18F-fluorodeoxyglucose (18F-FDG) to date actively used in tumor area of the head and neck to us- tanovki stages, monitoring from- veto on treatment, identifying recidivist and beam planning therapy [16].

According to various source specificity PET with 18F-FDG in diagnostics tumor lesions of the area head and neck fluctuates in pre- cases from 43 to 100% and sensitive efficiency - from 71 to 100% depending on dependency on research [13].

Use of PET with 18F-FDG has some limitations associated with complex anatomy and small size anatomical sky structures of the head area and neck, as well as physiological uptake of 18F-FDG by organs, which can negatively influence the interpretation of damage [17]. physiological absorption of 18F-FDG can observed in unchanged tissues brain, muscles neck, vocal cords, saliva glands, lymphatic fabrics, as well as in various add- malignant tumors [18].

Inflammatory processes that rye occur in patients after surgical treatment and/or radiation therapy courses are a common cause of false positives living results, because increased uptake of 18F-FDG. A motion-related the facts patient during the study metal dental which dentures can also influence the interpretation of semi- data [17]. Some of these limitations can be overcome by combining anatomical data obtained from computed tomography (CT) with functional PET data [19]. PET-CT allows obtaining high-quality images of correlated anatomical and functional data in a short period of time. The recent introduction of whole body PET-MRI into clinical practice opens up new possibilities for obtaining a complex of functional anatomical data [19]. Preliminary studies indicate good sensitivity (85%) and specificity (92%) of PET-MRI in the diagnosis of lymph node metastases [21]. Despite the possibilities of the above methods in diagnosing cancer of the tongue and floor of the mouth, the use of CT has a number of undeniable advantages: availability, lower cost, and the possibility of more accurate visualization of small cortical bone erosions [22 Scanning occurs in the axial plane, parallel to the mandible. To avoid artifacts, if a patient has a large number of dental fillings or metal structures in the oral cavity, scanning is performed in two series, with different positions of the patient's gantry angle and neck. Scanning should cover the neck area in order to exclude secondary localization of squamous cell carcinoma in the oropharynx, laryngopharynx or larynx, which occurs in 9-10% of patients, as well as to evaluate the lymph nodes and exclude their secondary involvement [23].

Tumor of the tongue or floor mouth with computer tomographic is visualized as at low density clear boundaries, with broken differentiation of structures in it against the background of muscle tissue tongue or floor of the mouth [24]. An important aspect is the identification of spread of the tumor process behind the middle line of the tongue, involvement in pathological skeletal muscle process of the tongue and surrounding anatomical structures from the point of view of metastasis zirovaniya, the volume of operational intervention and prognosis [25]. When analyzing

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CT results with intravenous contrast to display soft fabrics used standard soft tissue viewing window, whose width is 250–350 HU and level +40… +60HU. This window is intended chino to ensure a balance fixed display, search soft tissue changes. K. Jenny et al. revealed higher sensitivity levels and specificity of CT with intra- vein contrast with use for the analysis of semi-narrower window data viewing (width -120 HU, level -60 HU) [26]. During routine oral cavity scanning Difficulties may arise in visualization of formations of small size. There are several methods dik (cheek puffing, stretching- cheek puff with hold water or contrast agent in the oral cavity), contributing to demarcation of mucous membranes surfaces and more detailed estimating the prevalence of chole lesion [27].

The most popular technique is inflating puffed-cheek cheeks, let- wishing to receive additional information about the widespread sti tumor changes, differential differentiate the true length female tumor, reduce the number of artifacts from me- thallic dental prostheses. However, this method ka should be used only as an addition to standard CT with intravenous nym contrasting, how much does it impair visualization lymph nodes and blood vessels as well as their interrelations [28].

Intravascular administration radiopaque preparations tov increases resolution the ability of CT and should conduct in each case, when suspicion of tongue and fundus cancer mouth cavity due to the extremely compel the anatomical structure of this head and neck areas [13]. The thickness of the tumor is an important factor in predicting metastatic lesion niya of lymph nodes, places - recurrence and prognosis in patients with tongue cancer along with other options like like diameter, width, length, tumor area and volume [28]. International classification

TNM is widely used for forecast and choice of strategy le- tumors of various lo- calization [22]. Despite that characteristic T (size primary tumor) is important prognostic tool rule against cancer catches and necks, she does not define true (three-dimensional) volume tumors, and as a result may be incorrect stage of the disease [30]. In is- following M.A. Kuriakose et al. it was noted that the volume of the tumor well correlated with the presence the risk of metastases in the lymph nodes, failures but the chosen treatment and survival capacity [31]. A number of research showed that CT is effective non-invasive method of measuring the volume of the tumor whether is an independent predictor local tumor control heads and necks of various localizations [32]. According to many authors, the volume of the tumor should be taken into account when choosing the optimal small treatment strategy for patients with head tumors and neck. Data on the initial volume me tumors add valuable information for the forecast [33]. CT scan widely used to evaluate ki metastatic lesion neck lymph nodes [34]. Change in ovoid shape to rounded, increase in size, fuzzy contours, the presence of gipodensivnoy zone (zone necro- for), violation of the structure and increase in the density of the environment fabrics serve as a sign mi metastatic lesion lymph node [35]. Also it was found that higher density of lymphatic knots (about 330 HU) when active research is a sign of their metastatic lesions [36]. According to a number authors, 100% criterion, except expecting respectability meta- statically changed limphatic node, is a circ- carotid involvement arteries by more than 270° [37]. CT is sensitive to within 55–95% and specific 39–96% in the assessment of metastasis tically altered lymphatic neck knots, while sensitivity and specificity MRI scan rates are 64–92% and 40–81%, respectively [15]. CT scan is the preferred method home for evaluation of bone erosions, makes it possible to estimate the distribution lack of brain involvement substances and infiltration of carfare part of the lower jaw which are very important moments in planning le- [38].

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In the study J. Handschel et al. when evaluating attraction of bone structures lower her jaw according to the results of CT sensitivity was 82.6% and specificity - 86.9% [39]. According to some auto- ditch, CT is one of the main methods in the diagnosis of malignancy venous neoplasms of the head and neck. However, the assessment is only anatomical image zheniya has some shortcomings stats. In many cases, inflammation lytic reaction and edema can be differentiated from the tumor itself, which leads to indicate the wrong size ditch of education, and the next consequently, and setting erroneous stages of the disease [40]. CT-per- fusion is functional visualization method, let- assessing the degree of vascularity tissues. Compared with other methods CT-perfu- zia has a wider do- foot, relatively low cost and high space venous resolution [41]. In on- standing moment CT perfusion can be considered promising non-invasive evaluation method microcirculation changes in neoplasms such as pathocellular carcinoma, cancer pancreas, lungs, rectum, head and neck [42]. In domestic literature dedicated to this issue single articles. Regardless of the type of use research algorithm, using CT perfusion get the following parameters, characterizing the state of mi- crocirculation in the selected area area of interest: blood level ka (BF - blood flow), the volume of blood BV (blood volume), mean transit time of the contrast substances through the microcirculator- noe channel (MTT - mean transit time). Using the deco revolutions can be calculated the first parameter is permeability vascular bridge (PS - permeability surface). Permeability calculation makes it possible to produce assessment of tumor neoangiogenesis, because the walls of microvessels tumors are not solid (unlike from ordinary vessels), since are formed only from neo endotelium [42]. Tumor angionez is considered an important prognostic tic factor [43] and per- promising target of the new anticancer treatment [44]. New generations of drugs, bu- due to non-cytotoxic, allowing help to stabilize the process disease without significant influence on tumor size. This requires the use of methods for assessing tera- peptic response, such as CT perfusion, allowing assessment thread treatment effect much before resizing education [45, 46]. At CT perfusion in tumor tissue compared with normal increase in the previously mentioned metrics such as blood flow, blood volume, and lower average transit time [47] Z. Rumboldt et al. calculated whether the average indicators for flat cocellular carcinoma of the head and neck: BF level was 76–126 ml/ 100 g/min, BV - 5.6 ml / 100 g, MTT - 3.2–3.9 s and PS - 24.1– 40.6 ml / 100 g/min. results numerous studies show that tumors with low perfusion have higher levels of hypoxia, and the investigator but they have more resistance responsiveness to ongoing treatment [48]. Perfusion assessment in oncology gi allows you to differentiate malignant and benign venous formations, set stage of the disease and prognosis to control its course, as well as to carry out monitor various therapeutic treatment, whether the use of chemoradiation therapy PII or anti-angiogenic drugs [50].

Conclusion

As the analysis of foreign noah and domestic literature, problem of diagnosis and treatment cancer of the tongue and floor of the mouthful and requires special consideration of all possible aspects. In domestic literature this issue is highlighted extremely scarce. All this testifies speaks of the need further improvement imaging methods in diagnostic cancer of the tongue and floor of the cavity mouth for staging and choice of appropriate treatment.

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